# Coast more vulnerable now than in '44 storm

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Norma DeVries can't quite remember whether it was day or night, only that it was dark, and trees were coming down around her family's home on Maple Avenue in Farmingdale.

On Sept. 14, 1944, the 8-year-old girl's parents had another worry: Her grandparents were at their beach house in Manasquan, cheerfully riding out the storm.

Grandfather Walter J. Grove had invested some earnings from his Farmingdale animal feed and farm supply store in seaside real estate. Buffeted by the powerful wind, Grove walked across a dry beach that, on most days, was the bottom of the ocean.

"My grandfather told us the wind blew the ocean out past the poles for the fish pounds," commercial fishing traps that extended a mile offshore, DeVries said. "He walked out to the net. The fish were all flopping around."

With daylight fading, Grove headed back to the house not a minute too soon, she added.

"When the eye of the hurricane went by, the wind turned around and pushed the ocean back. It washed over to meet the river and went up Brielle Road almost to the Algonquin Theatre," she said. "My grandfather said it came in three waves, one about 25 feet high and two 15

(STAFF PHOTO: PETER ACKERMAN/CHIEF PHOTOGRAPHER)
Norma DeVries stands in front of the Manasquan beach house, once owned by her grandparents, that was inundated by waves during the hurricane that hit the Jersey Shore in 1944.

feet. . . . If he'd been on the boardwalk, he'd have gone out with it."

Old-timers called them tidal waves, and storm surges of near-tsunami proportions are remembered today only by a few witnesses to the 1938 and 1944 hurricanes.

That hurricanes could deliver such a punch without even making direct landfall on New Jersey's coast points to the Shore's vulnerability now, with the population having grown tenfold over 60 years, experts say.



"The Jersey Shore hasn't been hit by a major hurricane since 1944," said author James Lincoln Turner, who describes that tempest in his book, "Seven Superstorms of the Northeast," newly printed by Down the Shore Publishing of Harvey Cedars.

With more people at the Shore today, the danger of killer waves needs to be better understood, Turner said. "The continental shelf makes New Jersey more prone to a storm surge," he said. In 1944 "they had heights in excess of 40 feet," he added. "The 1938 hurricane wave broke a long way out (from the beach), but the 1944 wave came right down on the boardwalks."

"I think that people of the north . . . have less of a hurricane experience because they've been spared that for so many years," said Nicholas K. Coch, a professor of earth and environmental sciences at Queens College of the City University of New York, who specializes in researching historic accounts of long-forgotten hurricanes to predict the effect of future storms.

"Development has been going rampant all along the Atlantic coast," Coch said. Meanwhile, he said, "people's memories are not even one generation. The human being is a very dense animal. It doesn't learn lessons."

Army Corps of Engineers flood projections show around 30,000 homes in Monmouth County are vulnerable to flooding in a Category 2 hurricane with winds up to 110 mph, a storm strength that experts say is within the realm of possibility for the Middle Atlantic states.

In Ocean County, the number of at-risk homes jumps to 63,000, a reflection of the heavily developed barrier beach and bayside communities.

"People used to go home after Labor Day. But now they're building all along the beach, and it makes me laugh," DeVries said. "They're building these condos, and one of these days they're going to be gone."

Improved building codes and flood-elevated foundations on newer homes will prove their worth in the next major storm, said Thomas O. Herrington, graduate professor of ocean engineering at Stevens Institute of Technology in Hoboken.

"I think homes certainly can withstand . . . a Category 1 storm" with winds up to 95 mph, he said. "New construction, and the homes that have been there for a 100 years . . . certainly have withstood that before and can do that again.

"The question comes when we get to winds higher than we've ever had."

Peak winds measured historically in Atlantic City during close-approaching tropical systems have been around 75 mph, he said. But, Herrington noted, "we don't know if our built environment" — mainly residential construction —

"can withstand a wind and wave event" from a Category 2 storm.

New structures in North Carolina with bottom floors elevated above the flood level, hurricane straps that hold roofs and walls together, and other hurricane-resistant construction techniques have survived quite well, he said.

Emergency planners want to make sure those houses are empty when the next hurricane hits.

Mariana Mossler, who works in the Preparedness Unit of the State Police's Emergency Management Section, said there is about a 20-hour time frame for evacuating Long Beach Island, assuming a Category 3 storm is approaching on a peak-season summer weekend.

"So people need to be aware that preparedness means understanding that . . . the need to evacuate may happen before you see any signs of a storm," she said.

The goal is to evacuate before tropical-storm-force winds hit an area, she said.

That's because "as the winds pick up and the water rises, you don't want cars being stuck," she said. "There's nothing you can do, especially if the bridge is closed."

"Anybody vacationing at the Shore should make sure . . . they're aware of the evacuation routes in the area and should have a radio tuned to at least one local station preset," she said.

"I'd say we could probably (evacuate) the whole area that needs to go in less than 16 hours," including Long Beach Island and other coastal areas, said Ocean County Undersheriff Wayne R. Rupert, the county's emergency management chief.

"Wayne used to say, "We evacuate every Sunday,' " said James Eberwine, a meteorologist and ocean storm specialist at the National Weather Service office in Mount Holly, who works closely with emergency planners.

But a growing year-round population and changing demographics at the Shore make evacuation planning a constant exercise in public education because "these people have never experienced a tropical system," Eberwine said.

"I'd want to be making a decision (on whether to evacuate people) about 35 hours out," Rupert said. People need to be leaving well before the onset of rain and tropical-storm-force wind, Rupert and other emergency planners stress.

"The 39-mph winds are key," said Harry Conover, Monmouth County emergency management coordinator. "You want to be through your evacuation procedures before the storm-force winds arrive. That would be the coastal areas" of the northern Monmouth Bayshore and oceanfront towns most vulnerable to flooding and storm surge, he said.

Evacuation plans reach far inland to facilitate traffic flow westward away from the coast, by reversing the flow of traffic on Route 138 and Interstate 195 west to the New Jersey Turnpike — about a 30-mile stretch, Conover said. Meanwhile, "Inland reaches would have to watch out for the high winds" and the potential for tornadoes, Conover said.

"The thing that everybody needs to remember," Rupert said, "is there's no prize for being the last one out."

The last years of the 20th century brought a run of good luck for New Jersey. Three major fall and winter storms in 1991, 1992 and 1993 caused serious flooding, but nothing like the great winter gale of March 1962 or the 1944 and 1938 hurricanes.

Summer 1996 brought a season of strong Atlantic hurricanes that stayed far from New Jersey but made a summer of rough, sometimes dangerous surf. Then, for a few hours on the Friday leading into Labor Day weekend, it

appeared one storm was on a beeline path toward Atlantic City.

One of several forecast models used to predict hurricane tracks put Hurricane Edouard on top of Atlantic City, with winds up to 111 mph, by Labor Day. As Cape May County officials counted down to a decision for ordering an evacuation on the most crowded beach weekend of the year, new forecast models accurately predicted Edouard would sheer off to the northeast and stay far offshore.

"That was scary. Labor Day, Category 3 in Atlantic City? The minute I saw that come up on the screen, the phone rang, and someone asked, "Is this really going to happen?' " Eberwine said.

It's been pretty quiet since then. The last coastal emergency declaration was in February 1998, and that covered only Atlantic and Cape May counties, said Stewart Farrell, a professor at Richard Stockton College and director of the Coastal Research Center there.

*Second of a three-part series examining the potential threat to coastal areas and how people can cope if a hurricane strikes the Jersey Shore.*
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